Wheel Restoration Project

Since 1953, The state of New Hampshire has owned the last up-and-down sawmill in the state. This water powered Taylor Mill on Ballard's pond in Derry has been silent in recent years, its ponderous water wheel rusted and decayed with no state funds to repair it.

Nel-Tech Labs of Manchester, manufacturers of digital equipment, stepped in. Over a 2 year period, the old wheel was disassembled, its design carefully documented, and new white oak was ordered to replace the rotted wood. The wheel was rebuilt to closer tolerances that it had been when new. The firm invested over $40,000 in materials. Even more important, company personnel and local volunteers made a priceless contribution of time, ingenuity and mechanical skill to bring the machinery back to life.

Thanks to Nel-Tech Corp., the mill has been restored to working condition, and once again takes visitors back 200 years for an impressive glimpse of the marriage of technology, water power, and forest wealth that made New Hampshire's name familiar throughout Europe and the transatlantic world.

General Information & Directions to the Mill

Taylor Mill is the property of the Department of Resources and Economic Development and is cooperatively run by the Division of Parks and Recreation and the Division of Forests and Lands.

The mill is currently opened to the public for sawing demonstrations several times during the summer, offering visitors a glimpse into the beginnings of New Hampshire's forest products industry.

Hours of Operation: Saturdays during the month of July, subject to change. See brochure insert.

For information and group reservations, please call Urban Forestry Center at 603-431-6774 or the Regional Park Office at 603-436-1552

The mill is located on Island Pond Road in Derry.
Directions to the mill from I-93:
Exit 4 East on Rte. 102 to Rte. 28 By-Pass South. At 2nd set of lights, take left onto Island Pond Rd. The mill is 3.7 miles on the left.

Taylor Sawmill

Historic Site

A Cooperative State Historic Site

NH Parks and Recreation

NH Division of Forests and Lands

History of the Mill

The first sawmill in New England was built in 1623 at York, Maine. This first mill was a pit saw. It was structured to enable one man to stand above the log and one in the "pit" below. The pit-man supplied most of the saw's cutting power by pulling down, and the saw made another cut as it was pulled up. As you can imagine, the pit-man was constantly covered with sawdust.

Eight years later the first water powered up and down sawmill was built on the Salmon Falls River located in what is now the town of South Berwick, Maine.

In 1703 the first water powered "up and down" sawmill was built on the Salmon Falls River located in South Berwick, Maine. This mill employed the technology of the day; water from a river was diverted down a sluiceway and emptied into the buckets of a water wheel, the water wheel then rotated, turning pulleys and gears and finally drove the long saw blade "up and down". Up and down sawmills were operated until after the Civil War when they were converted to a new invention - the circular saw. This is the same type of saw we still see in many mills today.

The 200 year old "Taylor Up and Down Sawmill", is situated on the 85 acre Ballard State Forest in Derry, New Hampshire. Robert Taylor, for whom the mill is named, bought the property in 1799 and began operating an "up and down" sawmill similar to the current one about 1805. We are not sure of exactly when this mill stopped running.

The original mill, for the most part, had been sold for scrap when Ernest R. Ballard purchased the land in 1939. Mr. Ballard searched extensively over much of New England area for another "up and down" sawmill and finally found one in Sandown owned by Dan Hoit. The mill had been disassembled fifty years earlier and was stored under a barn. Mr. Ballard paid $180 for it. He and his wife spent two years assembling it and finding the necessary parts to put it in operating condition.

Unable to get an original wooden water wheel and learning of the astronomical expense of getting another built by hand, Mr. Ballard purchased a water wheel from a firm in Hanover Pennsylvania, the Fitz Water Company, for $3,000. The wheel was 6 feet wide, 12 feet in diameter, weighed about 1,000 pounds, and had 40 buckets.

The capacity of this sawmill is limited to logs 12 feet in length and 28 inches in diameter. The mill operates at about 60 strokes per minute. The log carriage feeds the saw at about 3/8 inch per stroke. Records indicate that other up and down sawmills were capable of sawing logs up to 38 feet in length with a diameter substantially larger than the capacity of the Taylor Mill.

This entire property, including the sawmill, the house nearby, and 85 acres of land, were very generously donated to the State of New Hampshire in 1956 by Mr. Ballard.

A Brief History of Sawmills and Lumbering in New England

Some of the first sawmills in North America were erected in the Piscataqua region during the early 1600's. 1634 marked the first shipment of New England masts to England. The trees used were white pines, 24 inches or greater in diameter, and were used as ship masts for the Kings's Navy. The pines were branded with the broad arrow to show they were owned by the King. The King forbade colonists from cutting marked pines, Colonists cut the branded pines anyway and made the boards less than 24 inches wide to prevent detection.

Up and down mills were in use from the 17th to mid 19th century. By 1706, seventy water powered sawmills were operating within a days ride of Portsmouth. With the invention of the circular saw, those mills with enough water power were able to convert, greatly increasing their production.

Around 1860, some mills converted to steam power, but it was not until the early 1900's that steam powered mills predominated over water powered mills. The lack of dependence on water allowed the mills to operate year-round rather than from April to December. Portable steam mills brought directly to the logging site eliminated the trucking of logs to the mill.

The 20th century brought on the gasoline engine, the diesel engine and the use of electricity. Many mills have converted from steam to diesel power only within the last 25 years. Now, most are electrically operated.

This mill represents a long history of producing forest products in New Hampshire. The forest products industry continues to be a major part of our economy today as the third largest manufacturing sector in the state.